

## VITAL SIGNS

# CONNECTICUT

**B**usiness leaders in Connecticut cannot find the science, technology, engineering and mathematics (STEM) talent they need to stay competitive. Students' lagging performance in K-12 is a critical reason why. The good news is that the nation's most effective STEM education programs can help turn the tide.

We have our work cut out for us. Connecticut students have made little progress in math over the past decade, and not enough students--least of all minorities--get the chance to learn challenging content that prepares them for college and careers. The state faces some of the biggest racial and ethnic achievement gaps in the nation.

## CONNECTICUT NEEDS MORE STEM TALENT

### STEM fields are growing in Connecticut

Between 2017 and 2027:

**STEM jobs will grow**

7%

**Non-STEM jobs will grow**

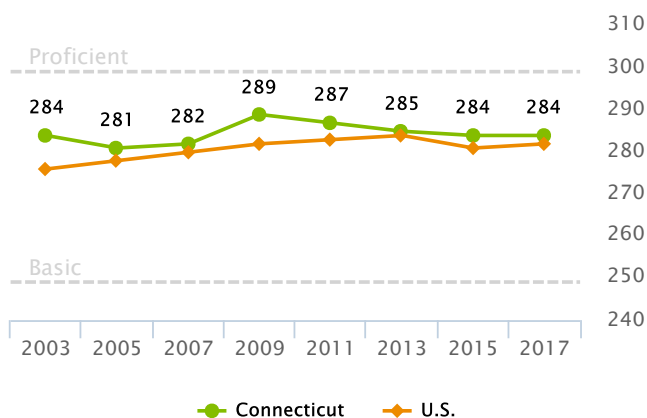
4%

## THE CONNECTICUT STEM SKILLS SHORTAGE STARTS EARLY

### Performance in math has been flat

Since 2003, Connecticut has made no progress in eighth-grade math.

Trends in 8th grade math scores, 2003-2017

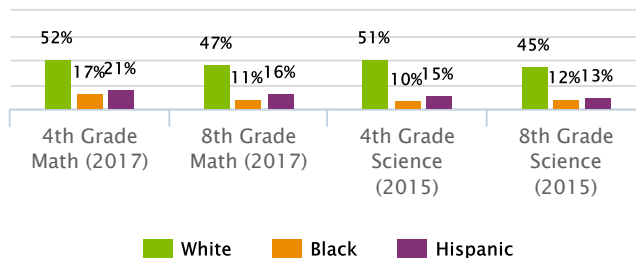


SOURCE: U.S. Department of Education, 2003-2017

### Students of color lag farthest behind

Closing achievement gaps must remain a priority.

Percentage of Connecticut students at or above proficient, by race/ethnicity



SOURCE: U.S. Department of Education, 2015-2017

\*Data not available or reporting requirements not met.

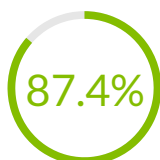
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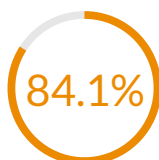
### The state must plug the gaps in the STEM pipeline

The Connecticut STEM pipeline loses young people at every level of the education system. Some fail to graduate from high school and many do not finish college, which narrows the pipeline of students who can gain advanced STEM skills. The 2-year college graduation rate is particularly low. Of those students who do graduate, few get a post-secondary degree in STEM.

What percentage of high school students graduate? (2014-2015)

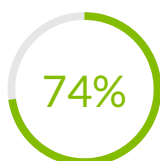


Connecticut

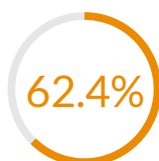


United States

Of high school graduates who enter a 4-year degree program, what percentage graduate? (2012-2013)



Connecticut

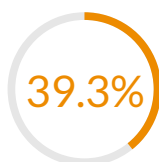


United States

Of high school graduates who enter a 2-year associate's degrees program, what percentage graduate? (2012-2013)



Connecticut

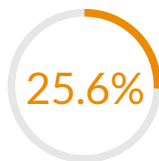


United States

What percentage of certificates and degrees is in STEM fields? (2014-2015)



Connecticut



United States

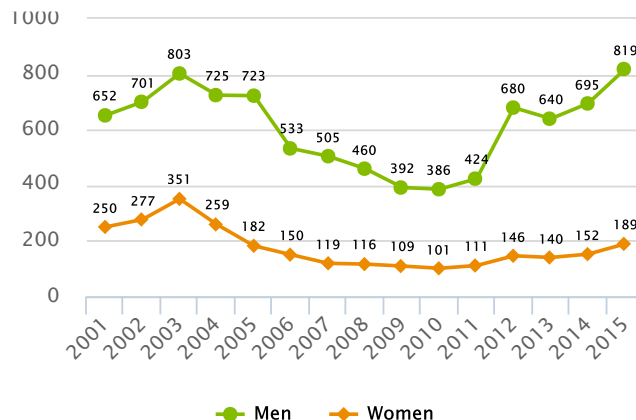
### TAP CONNECTICUT'S FEMALE AND MINORITY TALENT

Together, females and minorities make up more than half of Connecticut's population, yet they are much less likely to earn STEM degrees or become STEM professionals. Closing these gaps can pay big dividends in the state.

#### Women have lost ground in computing

The available talent in computer science would rise dramatically if the state simply closed the gender gap in these subjects.

Number of computing degrees/certificates in Connecticut

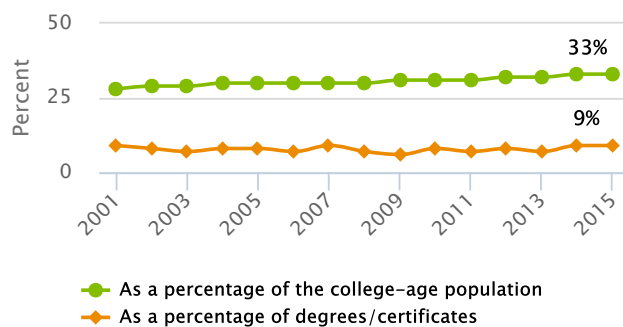


SOURCE: U.S. Department of Education, 2001-2015

#### People of color are not gaining ground in engineering degrees

It is critical to prepare and inspire many more students of color to pursue STEM subjects such as computer science and engineering.

Underrepresented minorities in Connecticut earning engineering degrees/certificates



SOURCE: U.S. Department of Education, 2001-2015

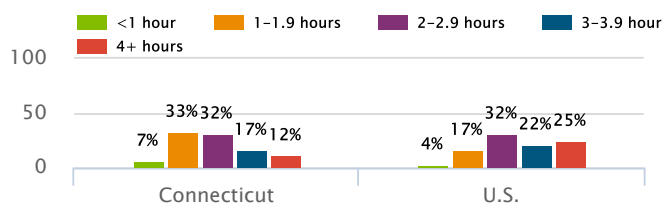
\*Data not available or reporting requirements not met.

### GIVE STATE STUDENTS ACCESS TO BETTER STEM LEARNING OPPORTUNITIES

Lack of access to such opportunities severely limits young people's college and career prospects.

#### The state should make more time for elementary science

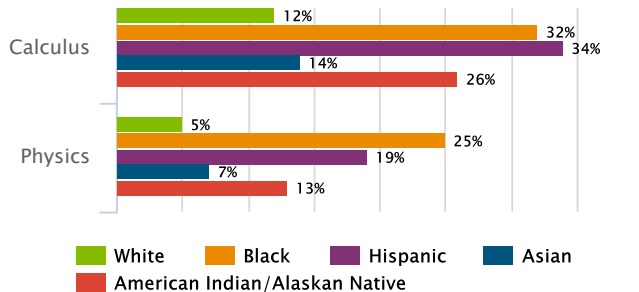
Hours per week spent on science, grades 1-4, 2015



#### The state should improve access to advanced courses

Many students lack access to such courses.

Students in Connecticut high schools that do not offer challenging math and science courses, 2013/14



Success in Advanced Placement courses can put more students on a path to STEM careers.

Of the high school graduating class of 2015 in Connecticut:

	Took AP Math Exam	Scored 3+ on AP Math Exam
All Students	16%	11%
White	18%	13%
Black	6%	2%
Hispanic	9%	3%
Asian	42%	29%
American Indian/Alaskan Native	10%	5%

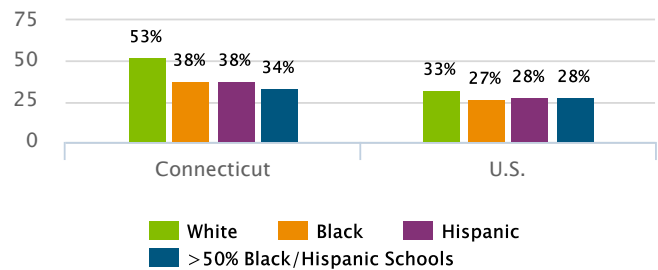


### DEVELOP AND RETAIN TALENTED STEM TEACHERS IN CONNECTICUT

Research shows that teachers' content knowledge and teaching experience can affect student performance

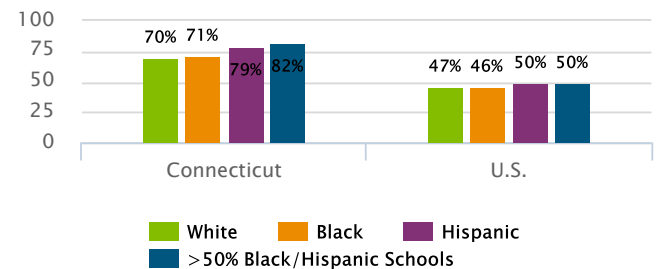
#### Boost teachers' content knowledge

Eighth-graders whose math teachers have an undergraduate major in math, 2017



SOURCE: U.S. Department of Education 2017

Eighth-graders whose science teachers have an undergraduate major in science, 2015

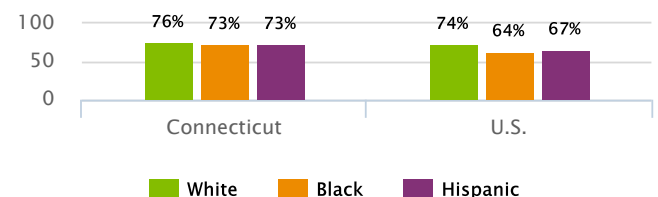


SOURCE: U.S. Department of Education 2015

#### Retain excellent teachers

Minority students are most likely to have inexperienced teachers

Eighth-graders whose math teachers have 6+ years of experience teaching their subject



SOURCE: U.S. Department of Education 2017

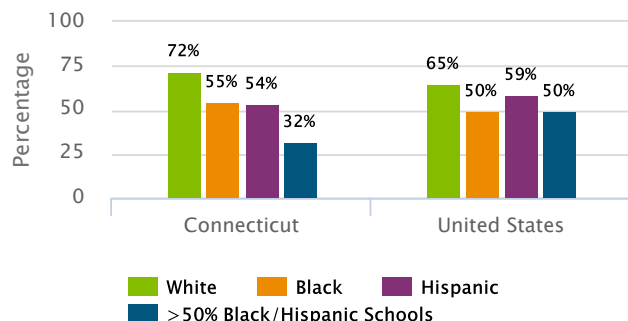
\*Data not available or reporting requirements not met.

### GIVE CONNECTICUT SCHOOLS AND TEACHERS THE RESOURCES THEY NEED

Teachers in Connecticut need better resources, facilities, and teaching materials to succeed.

#### Too many teachers lack the tools of their trade

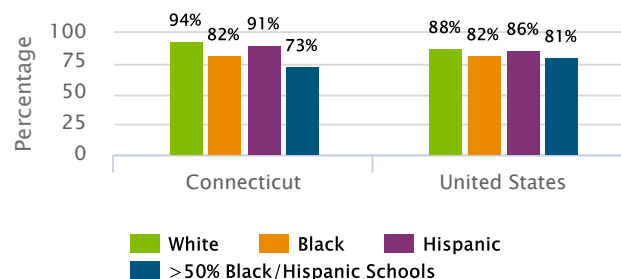
Eighth-graders whose science teachers say they have all or most of the resources they need, 2015



SOURCE: U.S. Department of Education, 2015

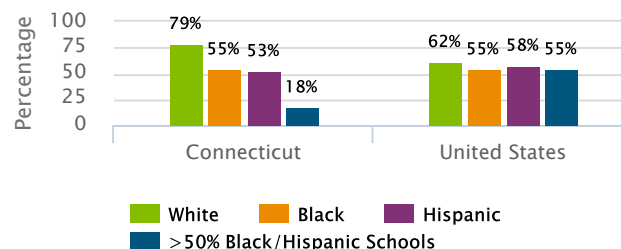
### The state should improve access to science facilities and supplies

Eighth-graders whose schools have science labs, 2015



SOURCE: U.S. Department of Education, 2015

Eighth-graders whose schools report that supplies or materials for science labs are available "to a large extent," 2015



SOURCE: U.S. Department of Education, 2015

\*Data not available or reporting requirements not met.

For the complete state report, methodology, and sources, see [vitalsigns.ecs.org](http://vitalsigns.ecs.org) ([vitalsigns.ecs.org](http://vitalsigns.ecs.org))

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